(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 March 2001 (08.03.2001)

PCT

(10) International Publication Number
WO 01/15543 A1

(51) International Patent Classification[7]: A23G 1/00, 3/00, 9/02

(21) International Application Number: PCT/GB00/03268

(22) International Filing Date: 25 August 2000 (25.08.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9920300.2 27 August 1999 (27.08.1999) GB

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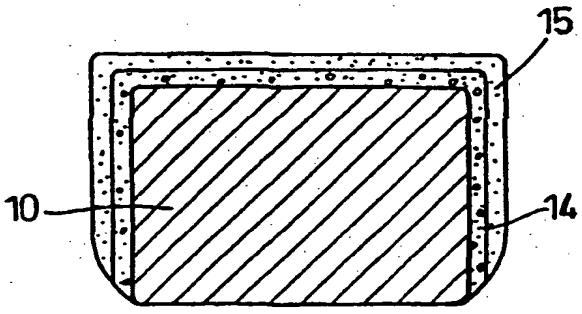
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONFECTIONERY COATINGS



(57) Abstract: A process for coating a food product (10) comprises applying a coating (14) of aerated liquid confectionery material and applying a coating (15) or relatively unaerated liquid confectionery material. The liquid confectionery material used may be chocolate. Since unaerated chocolate generally melts less easily than aerated chocolate providing the product with an outer coating reduces the risk of chocolate melting in someone's fingers. Several other advantages also result from the inventive process. Since aerated chocolate is generally paler than unaerated chocolate, the coating of relatively unaerated chocolate improves the colour of the item. Moreover, since aeration can improve taste in some cases, a product coated in accordance with the invention could have improved taste without a deterioration in appearance or handling/shelf life characteristics. Yet a further advantage of coating a product in accordance with the inventive process is that, since aerated chocolate is generally more viscous than unaerated chocolate, a thick coating of aerated chocolate could be applied at much lower cost than unaerated chocolate but at the same time achieving substantially the same consumer appeal as for a "thick" chocolate coating.

WO 01/15543 A1

CONFECTIONERY COATINGS

This invention relates to the application of confectionery coatings and particularly to the application of a number of confectionery coatings containing different levels of aeration.

Where the context admits, the term 'aerated' will be used herein to cover bubbles containing gases other than air. For example, bubbles of nitrogen may be used.

According to a first aspect of the invention there is provided a process for coating a product comprising applying a coating of aerated liquid confectionery material and applying a coating of relatively unaerated liquid confectionery material.

Preferably the coating of relatively unaerated liquid confectionery material is substantially unaerated.

Preferably the coating of relatively unaerated liquid confectionery material is applied subsequent to the application of the aerated layer.

The inventive coating process may be used to coat biscuits, confectionery items such as soft centres, bar combinations, frozen confectionery items, cakes and setting yoghurts etc.

The present invention is aimed primarily at providing a process for applying a number of chocolate coatings to a product, the coatings containing different levels of aeration, but the invention may be used to produce composite coatings of other confectionery materials.

According to a second aspect of the invention there is provided a product, the product being provided with a coating of aerated confectionery material and a coating of relatively unaerated confectionery material.

The invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a schematic illustration of apparatus which uses the inventive process, and

Figure 2 is a schematic cross-section of an item which has been produced by the apparatus shown in Figure 1.

Figure 1 shows chocolate coating apparatus 1 which comprises a first coating unit 3, a second coating unit 4 and a conveyor belt 6.

The first and second units 3, 4 may be any suitable kind of coating unit. Many such coating units are known in the art.

The first and second coating units 3 and 4 may be in the form of manifolds which are generally in the form of tubes and are each provided with an inlet (not referenced) and an elongate outlet (not referenced) which is situated on the underside of each manifold. Such a coating unit is described in our co-pending application No. GB 9917657.0 filed 28 July 1999, No. GB 9909276.9 filed 22 April 1999, and in application No. PCT/GB00/01555 filed 19 April 2000. Those applications also disclose suitable apparatus for aerating the confectionery material supplied to coating unit 3.

Each manifold inlet is connected to a respective liquid confectionery material supply circuit (not illustrated) which may comprise a tempering unit.

In use, the chocolate coating apparatus 1 operates as follows. The respective supply circuits feed liquid chocolate into the coating unit, the coating unit 3 being supplied with aerated liquid chocolate and the coating unit 4 being supplied with relatively unaerated liquid chocolate.

The coating units 3, 4 provide a curtain of aerated chocolate 7 and a curtain of relatively unaerated chocolate 8 respectively. The chocolate applied by coating unit 3 is typically 25% aerated, that is, the density of the aerated chocolate is 25% less than that of non-aerated chocolate. The bubbles present in the chocolate 7 are typically of microscopic size and are therefore not visible to the naked eye.

The term 'relatively unaerated coating' used herein should be taken to mean both a coating which has not been aerated and also a coating which has been aerated to a certain extent but which would nevertheless be considered to be substantially unaerated relative to the other (aerated) coating 14.

A product placed on the conveyer belt 10 would first be coated by the aerated chocolate curtain 7. The product would then pass through a cooling tunnel 9 in order to reduce the temperature of the aerated coating. The product is then coated by the relatively unaerated chocolate curtain 8. The resulting item 12 which leaves the apparatus 1 is shown in Figure 2, the product 10 having been provided with an aerated coating 14 and a relatively unaerated coating 15. The aerated coating 14 is provided between the product 10 and the unaerated coating 15.

In some embodiments the cooling tunnel 9 may be omitted entirely or may if desired be replaced by an air blower to form a 'skin' on the aerated coating.

One advantage of the item 12 is that since unaerated chocolate generally melts less easily than aerated chocolate, the outer relatively unaerated coating reduces the risk of chocolate melting in someone's fingers. Another advantage of the item 12 is that since aerated chocolate is generally paler than unaerated chocolate, the coating of relatively unaerated chocolate improves the colour of the item. Moreover, since aeration can improve taste in some cases, a product coated by apparatus 1 could have improved taste without a deterioration in appearance or handling/shelf life characteristics.

Yet a further advantage of coating a product with the apparatus 1 is that since aerated chocolate is generally more viscous than unaerated chocolate, a thick coating of aerated chocolate could be applied at much lower cost than unaerated chocolate but at the same time achieving substantially the same consumer appeal as for a 'thick' chocolate coating.

The coating units 3 and 4 may employ dipping or spraying etc instead of enrobing.

CLAIMS

1. A process for coating a product (10) comprising applying a coating (14) of aerated liquid confectionery material and applying a coating (15) of relatively unaerated liquid confectionery material.

2. A process as claimed in claim 1 in which the coating (15) of relatively unaerated liquid confectionery material is substantially unaerated.

3. A process as claimed in claim 1 or claim 2 in which the coating (15) of relatively unaerated liquid confectionery material is applied subsequent to the application of the aerated layer (14).

4. A process as claimed in any of the preceding claims in which the confectionery material of both layers (14, 15) is chocolate.

5. A product provided with a first coating (14) of aerated confectionery material and a second coating (15) of relatively unaerated confectionery material, the second coating overlaying the first coating.

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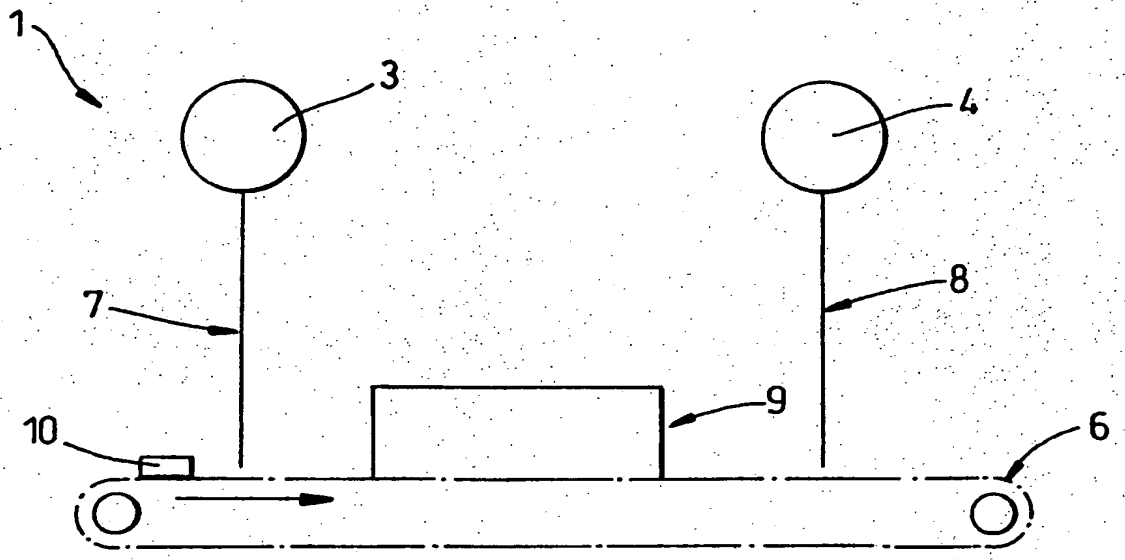

Fig. 1

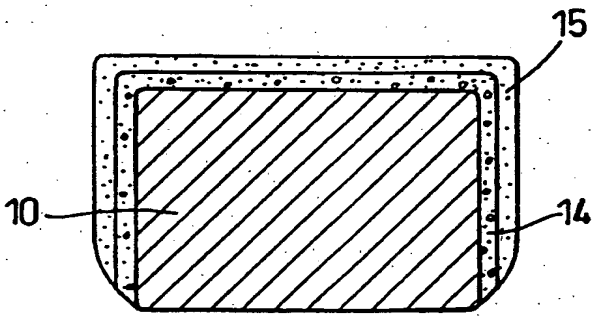

Fig. 2

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 00/03268

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A23G1/00 A23G3/00 A23G9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A23G A21D A23P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
5 December 2000	12/12/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Boddaert, P

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